

What is claimed is:

- 1 1. A machine-implemented method, comprising:
 - 2 in response to an ending of execution of a first process that executed in a first virtual
 - 3 operating system environment (VOSE) of a plurality of VOSEs controlled by
 - 4 a single operating system kernel instance, determining in which VOSE of the
 - 5 plurality of VOSEs the first process executed; and
 - 6 in response to determining that the first process executed in the first VOSE,
 - 7 recording, in a first system accounting log file (SALF) stored in a first file
 - 8 system partition associated with the first VOSE, first accounting information
 - 9 about the first process.
- 1 2. The method of claim 1, further comprising:
 - 2 in response to determining that the first process executed in the first VOSE,
 - 3 determining, based on first accounting settings that are associated with the
 - 4 first VOSE, one or more specified accounting information aspects of a
 - 5 plurality of accounting information aspects;
 - 6 wherein recording the first accounting information comprises recording aspects of
 - 7 accounting information that correspond to the one or more specified
 - 8 accounting information aspects.
- 1 3. The method of claim 2, further comprising:
 - 2 in response to an invocation of an accounting settings updating function by a second
 - 3 process that is executing in the first VOSE, determining in which VOSE of the
 - 4 plurality of VOSEs the second process is executing; and

5 in response to determining that the second process is executing in the first VOSE,
6 updating the first accounting settings;
7 wherein the accounting settings updating function is implemented by the operating
8 system kernel instance.

1 4. The method of claim 3, wherein processes that do not execute in the first VOSE are
2 prevented from updating the first accounting settings.

1 5. The method of claim 1, wherein the first SALF is not accessible by any processes that
2 execute in any VOSE other than the first VOSE.

1 6. The method of claim 1, further comprising:
2 in response to an ending of execution of a second process that executed in a second
3 VOSE of the plurality of VOSEs, determining in which VOSE of the plurality
4 of VOSEs the second process executed; and
5 in response to determining that the second process executed in the second VOSE,
6 recording, in a second SALF stored in a second file system partition
7 associated with the second VOSE, second accounting information about the
8 second process;
9 wherein the first VOSE is separate from the second VOSE.

1 7. The method of claim 6, further comprising:
2 in response to determining that the first process executed in the first VOSE,
3 determining, based on first accounting settings that are associated with the
4 first VOSE, one or more first specified accounting information aspects of a
5 plurality of accounting information aspects; and

6 in response to determining that the second process executed in the second VOSE,
7 determining, based on second accounting settings that are associated with the
8 second VOSE, one or more second specified accounting information aspects
9 of the plurality of accounting information aspects;
10 wherein recording the first accounting information comprises recording aspects of
11 accounting information that correspond to the one or more first specified
12 accounting information aspects;
13 wherein recording the second accounting information comprises recording aspects of
14 accounting information that correspond to the one or more second specified
15 accounting information aspects; and
16 wherein the one or more first specified accounting information aspects are separate
17 from the one or more second specified accounting information aspects.

1 8. The method of claim 7, further comprising:
2 in response to an invocation of an accounting settings updating function by a second
3 process that is executing in the first VOSE, determining in which VOSE of the
4 plurality of VOSEs the third process is executing;
5 in response to determining that the third process is executing in the first VOSE,
6 updating the first accounting settings;
7 in response to an invocation of the accounting settings updating function by a fourth
8 process that is executing in the second VOSE, determining in which VOSE of
9 the plurality of VOSEs the fourth process is executing; and
10 in response to determining that the fourth process is executing in the second VOSE,
11 updating the second accounting settings;

12 wherein the accounting settings updating function is implemented by the operating
13 system kernel instance; and
14 wherein the first accounting settings are separate from the second accounting settings.

1 9. The method of claim 1, further comprising:
2 in response to the ending of execution of the first process, recording, in a second
3 SALF stored in a file system that is associated with a global operating system
4 environment (OSE) that comprises the plurality of VOSEs, second accounting
5 information about the first process;

6 wherein the second SALF is separate from the first SALF.

1 10. The method of claim 9, further comprising:
2 in response to determining that the first process executed in the first VOSE,
3 determining, based on first accounting settings that are associated with the
4 first VOSE, one or more first specified accounting information aspects of a
5 plurality of accounting information aspects; and
6 determining, based on second accounting settings that are associated with the global
7 OSE, one or more second specified accounting information aspects of the
8 plurality of accounting information aspects;

9 wherein recording the first accounting information comprises recording aspects of
10 accounting information that correspond to the one or more first specified
11 accounting information aspects;

12 wherein recording the second accounting information comprises recording aspects of
13 accounting information that correspond to the one or more second specified
14 accounting information aspects; and

15 wherein the one or more first specified accounting information aspects are separate
16 from the one or more second specified accounting information aspects.

1 11. The method of claim 10, further comprising:
2 in response to an invocation of an accounting settings updating function by a second
3 process that is executing in the first VOSE, determining in which of the global
4 OSE and the plurality of VOSEs the second process is executing;
5 in response to determining that the second process is executing in the first VOSE,
6 updating the first accounting settings;
7 in response to an invocation of the accounting settings updating function by a third
8 process that is executing in the global OSE, determining in which of the
9 global OSE and the plurality of VOSEs the third process is executing; and
10 in response to determining that the third process is executing in the global OSE,
11 updating the second accounting settings;
12 wherein the first accounting settings are separate from the second accounting settings;
13 and
14 wherein the accounting settings updating function is implemented by the operating
15 system kernel instance.

1 12. The method of claim 9, wherein the second accounting information indicates an
2 identity of a VOSE in which the first process executed.

1 13. A machine-readable medium, comprising:
2 instructions for causing one or more processors to determine, in response to an ending
3 of execution of a first process that executed in a first virtual operating system
4 environment (VOSE) of a plurality of VOSEs controlled by a single operating

5 system kernel instance, in which VOSE of the plurality of VOSEs the first
6 process executed; and
7 instructions for causing one or more processors to record, in response to determining
8 that the first process executed in the first VOSE, in a first system accounting
9 log file (SALF) stored in a first file system partition associated with the first
10 VOSE, first accounting information about the first process.

1 14. The machine-readable medium of claim 13, further comprising:
2 instructions for causing one or more processors to determine, based on first
3 accounting settings that are associated with the first VOSE, in response to
4 determining that the first process executed in the first VOSE, one or more
5 specified accounting information aspects of a plurality of accounting
6 information aspects;
7 wherein the instructions for causing one or more processors to record the first
8 accounting information comprise instructions for causing one or more
9 processors to record aspects of accounting information that correspond to the
10 one or more specified accounting information aspects.

1 15. The machine-readable medium of claim 14, further comprising:
2 instructions for causing one or more processors to determine, in response to an
3 invocation of an accounting settings updating function by a second process
4 that is executing in the first VOSE, in which VOSE of the plurality of VOSEs
5 the second process is executing; and

6 instructions for causing one or more processors to update, in response to determining
7 that the second process is executing in the first VOSE, the first accounting
8 settings;
9 wherein the accounting settings updating function is implemented by the operating
10 system kernel instance.

1 16. The machine-readable medium of claim 15, wherein processes that do not execute in
2 the first VOSE are prevented from updating the first accounting settings.

1 17. The machine-readable medium of claim 13, wherein the first SALF is not accessible
2 by any processes that execute in any VOSE other than the first VOSE.

1 18. The machine-readable medium of claim 13, further comprising:
2 instructions for causing one or more processors to determine, in response to an ending
3 of execution of a second process that executed in a second VOSE of the
4 plurality of VOSEs, in which VOSE of the plurality of VOSEs the second
5 process executed; and

6 instructions for causing one or more processors to record, in response to determining
7 that the second process executed in the second VOSE, in a second SALF
8 stored in a second file system partition associated with the second VOSE,
9 second accounting information about the second process;

10 wherein the first VOSE is separate from the second VOSE.

1 19. The machine-readable medium of claim 18, further comprising:
2 instructions for causing one or more processors to determine, based on first
3 accounting settings that are associated with the first VOSE, in response to
4 determining that the first process executed in the first VOSE, one or more first

5 specified accounting information aspects of a plurality of accounting
6 information aspects; and
7 instructions for causing one or more processors to determine, based on second
8 accounting settings that are associated with the second VOSE, in response to
9 determining that the second process executed in the second VOSE, one or
10 more second specified accounting information aspects of the plurality of
11 accounting information aspects;
12 wherein the instructions for causing one or more processors to record the first
13 accounting information comprise instructions for causing one or more
14 processors to record aspects of accounting information that correspond to the
15 one or more first specified accounting information aspects;
16 wherein the instructions for causing one or more processors to record the second
17 accounting information comprise instructions for causing one or more
18 processors to record aspects of accounting information that correspond to the
19 one or more second specified accounting information aspects; and
20 wherein the one or more first specified accounting information aspects are separate
21 from the one or more second specified accounting information aspects.

1 20. The machine-readable medium of claim 19, further comprising:
2 instructions for causing one or more processors to determine, in response to an
3 invocation of an accounting settings updating function by a second process
4 that is executing in the first VOSE, in which VOSE of the plurality of VOSEs
5 the third process is executing;

6 instructions for causing one or more processors to update, in response to determining
7 that the third process is executing in the first VOSE, the first accounting
8 settings;
9 instructions for causing one or more processors to determine, in response to an
10 invocation of the accounting settings updating function by a fourth process
11 that is executing in the second VOSE, in which VOSE of the plurality of
12 VOSEs the fourth process is executing; and
13 instructions for causing one or more processors to update, in response to determining
14 that the fourth process is executing in the second VOSE, the second
15 accounting settings;
16 wherein the accounting settings updating function is implemented by the operating
17 system kernel instance; and
18 wherein the first accounting settings are separate from the second accounting settings.

1 21. The machine-readable medium of claim 13, further comprising:
2 instructions for causing one or more processors to record, in response to the ending of
3 execution of the first process, in a second SALF stored in a file system that is
4 associated with a global operating system environment (OSE) that comprises
5 the plurality of VOSEs, second accounting information about the first process;
6 wherein the second SALF is separate from the first SALF.

1 22. The machine-readable medium of claim 21, further comprising:
2 instructions for causing one or more processors to determine, based on first
3 accounting settings that are associated with the first VOSE, in response to
4 determining that the first process executed in the first VOSE, one or more first

5 specified accounting information aspects of a plurality of accounting
6 information aspects; and
7 instructions for causing one or more processors to determine, based on second
8 accounting settings that are associated with the global OSE, one or more
9 second specified accounting information aspects of the plurality of accounting
10 information aspects;
11 wherein the instructions for causing one or more processors to record the first
12 accounting information comprise instructions for causing one or more
13 processors to record aspects of accounting information that correspond to the
14 one or more first specified accounting information aspects;
15 wherein the instructions for causing one or more processors to record the second
16 accounting information comprise instructions for causing one or more
17 processors to record aspects of accounting information that correspond to the
18 one or more second specified accounting information aspects; and
19 wherein the one or more first specified accounting information aspects are separate
20 from the one or more second specified accounting information aspects.

1 23. The machine-readable medium of claim 22, further comprising:
2 instructions for causing one or more processors to determine, in response to an
3 invocation of an accounting settings updating function by a second process
4 that is executing in the first VOSE, in which of the global OSE and the
5 plurality of VOSEs the second process is executing;
6 instructions for causing one or more processors to update, in response to determining
7 that the second process is executing in the first VOSE, the first accounting
8 settings;

9 instructions for causing one or more processors to determine, in response to an
10 invocation of the accounting settings updating function by a third process that
11 is executing in the global OSE, in which of the global OSE and the plurality of
12 VOSEs the third process is executing; and
13 instructions for causing one or more processors to update, in response to determining
14 that the third process is executing in the global OSE, the second accounting
15 settings;
16 wherein the first accounting settings are separate from the second accounting settings;
17 and
18 wherein the accounting settings updating function is implemented by the operating
19 system kernel instance.

- 1 24. The machine-readable medium of claim 21, wherein the second accounting
2 information indicates an identity of a VOSE in which the first process executed.
- 1 25. An apparatus, comprising:
2 a mechanism for determining, in response to an ending of execution of a first process
3 that executed in a first virtual operating system environment (VOSE) of a
4 plurality of VOSEs controlled by a single operating system kernel instance, in
5 which VOSE of the plurality of VOSEs the first process executed; and
6 a mechanism for recording, in response to determining that the first process executed
7 in the first VOSE, in a first system accounting log file (SALF) stored in a first
8 file system partition associated with the first VOSE, first accounting
9 information about the first process.

- 1 26. The apparatus of claim 25, further comprising:
 - 2 a mechanism for determining, based on first accounting settings that are associated
 - 3 with the first VOSE, in response to determining that the first process executed
 - 4 in the first VOSE, one or more specified accounting information aspects of a
 - 5 plurality of accounting information aspects;
 - 6 wherein the mechanism for recording the first accounting information comprises a
 - 7 mechanism for recording aspects of accounting information that correspond to
 - 8 the one or more specified accounting information aspects.
- 1 27. The apparatus of claim 26, further comprising:
 - 2 a mechanism for determining, in response to an invocation of an accounting settings
 - 3 updating function by a second process that is executing in the first VOSE, in
 - 4 which VOSE of the plurality of VOSEs the second process is executing; and
 - 5 a mechanism for updating, in response to determining that the second process is
 - 6 executing in the first VOSE, the first accounting settings;
 - 7 wherein the accounting settings updating function is implemented by the operating
 - 8 system kernel instance.
- 1 28. The apparatus of claim 27, wherein processes that do not execute in the first VOSE
- 2 are prevented from updating the first accounting settings.
- 1 29. The apparatus of claim 25, wherein the first SALF is not accessible by any processes
- 2 that execute in any VOSE other than the first VOSE.

- 1 30. The apparatus of claim 25, further comprising:
 - 2 a mechanism for determining, in response to an ending of execution of a second process that executed in a second VOSE of the plurality of VOSEs, in which VOSE of the plurality of VOSEs the second process executed; and
 - 5 a mechanism for recording, in response to determining that the second process executed in the second VOSE, in a second SALF stored in a second file system partition associated with the second VOSE, second accounting information about the second process;
 - 9 wherein the first VOSE is separate from the second VOSE.
- 1 31. The apparatus of claim 30, further comprising:
 - 2 a mechanism for determining, based on first accounting settings that are associated with the first VOSE, in response to determining that the first process executed in the first VOSE, determining one or more first specified accounting information aspects of a plurality of accounting information aspects; and
 - 6 a mechanism for determining, based on second accounting settings that are associated with the second VOSE, in response to determining that the second process executed in the second VOSE, one or more second specified accounting information aspects of the plurality of accounting information aspects;
 - 10 wherein the mechanism for recording the first accounting information comprises a mechanism for recording aspects of accounting information that correspond to the one or more first specified accounting information aspects;
 - 11
 - 12

13 wherein the mechanism for recording the second accounting information comprises a
14 mechanism for recording aspects of accounting information that correspond to
15 the one or more second specified accounting information aspects; and
16 wherein the one or more first specified accounting information aspects are separate
17 from the one or more second specified accounting information aspects.

1 32. The apparatus of claim 31, further comprising:
2 a mechanism for determining, in response to an invocation of an accounting settings
3 updating function by a second process that is executing in the first VOSE, in
4 which VOSE of the plurality of VOSEs the third process is executing;
5 a mechanism for updating, in response to determining that the third process is
6 executing in the first VOSE, the first accounting settings;
7 a mechanism for determining, in response to an invocation of the accounting settings
8 updating function by a fourth process that is executing in the second VOSE, in
9 which VOSE of the plurality of VOSEs the fourth process is executing; and
10 a mechanism for updating, in response to determining that the fourth process is
11 executing in the second VOSE, the second accounting settings;
12 wherein the accounting settings updating function is implemented by the operating
13 system kernel instance; and
14 wherein the first accounting settings are separate from the second accounting settings.

1 33. The apparatus of claim 25, further comprising:
2 a mechanism for recording, in response to the ending of execution of the first process,
3 in a second SALF stored in a file system that is associated with a global

4 operating system environment (OSE) that comprises the plurality of VOSEs,
5 second accounting information about the first process;
6 wherein the second SALF is separate from the first SALF.

1 34. The apparatus of claim 33, further comprising:
2 a mechanism for determining, based on first accounting settings that are associated
3 with the first VOSE, in response to determining that the first process executed
4 in the first VOSE, one or more first specified accounting information aspects
5 of a plurality of accounting information aspects; and
6 a mechanism for determining, based on second accounting settings that are associated
7 with the global OSE, one or more second specified accounting information
8 aspects of the plurality of accounting information aspects;
9 wherein the mechanism for recording the first accounting information comprises a
10 mechanism for recording aspects of accounting information that correspond to
11 the one or more first specified accounting information aspects;
12 wherein the mechanism for recording the second accounting information comprises a
13 mechanism for recording aspects of accounting information that correspond to
14 the one or more second specified accounting information aspects; and
15 wherein the one or more first specified accounting information aspects are separate
16 from the one or more second specified accounting information aspects.

1 35. The apparatus of claim 34, further comprising:
2 a mechanism for updating, in response to an invocation of an accounting settings
3 updating function by a second process that is executing in the first VOSE, in

4 which of the global OSE and the plurality of VOSEs the second process is
5 executing;
6 a mechanism for updating, in response to determining that the second process is
7 executing in the first VOSE, the first accounting settings;
8 a mechanism for determining, in response to an invocation of the accounting settings
9 updating function by a third process that is executing in the global OSE, in
10 which of the global OSE and the plurality of VOSEs the third process is
11 executing; and
12 a mechanism for updating, in response to determining that the third process is
13 executing in the global OSE, the second accounting settings;
14 wherein the first accounting settings are separate from the second accounting settings;
15 and
16 wherein the accounting settings updating function is implemented by the operating
17 system kernel instance.

- 1 36. The apparatus of claim 33, wherein the second accounting information indicates an
2 identity of a VOSE in which the first process executed.